



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/870,665 | 06/01/2001 | Alan F. Graves | | 8644 |

7590 08/11/2004

Gowling Lafleur Henderson LLP
Suite 2600
160 Elgin Street
Ottawa, ON K1P 1C3
CANADA

| |
|----------|
| EXAMINER |
|----------|

CURS, NATHAN M

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2633

DATE MAILED: 08/11/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,665

Applicant(s)

GRAVES ET AL.

Examiner

Nathan Curs

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20, 22-24 and 26-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 is/are allowed.
- 6) ☒ Claim(s) 10-20, 22-24 and 26-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2633

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11-14 and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 11-13 and 16-18, the phrases "a second group" and "selected second wavelengths" is unclear, because "a first group" and "selected first wavelengths" are not mentioned in these claims or the claims from which they depend

3. Claims 14 and 19 recite the limitation "the first group". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 20, 22-24, 26-28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharma et al. (US Patent No. 5717795).

Art Unit: 2633

Regarding claim 20, Sharma et al. disclose a method of optical wavelength allocation in a photonic network comprising the steps of: generating a plurality of unmodulated optical wavelengths at a first location in the network (fig. 4 and col. 5, lines 46-53); forming a group of wavelengths by grouping selected wavelengths (fig. 4, element 71, and col. 5, lines 53-59); transmitting the group of wavelengths to a second location in the network, modulating one of the group of wavelengths at the second location, and passing the group of wavelengths to a third location in the network (fig. 4, elements 61, $\lambda 2$ and 63, and col. 5, line 60 to col. 6, line 15).

Regarding claim 22, Sharma et al. disclose a method as claimed in claim 20 further comprising the step of modulating a second of the group of wavelengths at the third location (fig. 4, elements 63, $\lambda 2'$ and 61, and col. 5, line 60 to col. 6, line 15).

Regarding claim 23, Sharma et al. disclose a method as claimed in claim 22 further comprising the step of passing the modulated second of the group of wavelengths back to the second location thereby establishing a two way communications path using two optical wavelengths between the second and third locations (fig. 4, elements 63, $\lambda 2'$ and 61, and col. 5, line 60 to col. 6, line 15).

Regarding claim 24, Sharma et al. disclose apparatus for optical wavelength allocation in a photonic network comprising: means for generating a plurality of unmodulated optical wavelengths at a first location in the network (fig. 4 and col. 5, lines 46-53); means for forming a group of wavelengths by grouping selected wavelengths (fig. 4, element 71, and col. 5, lines 53-59); means for transmitting the group of wavelengths to a second location in the network, means for modulating one of the group of wavelengths at the second location, and means for passing the group of wavelengths to a third location in the network (fig. 4, elements 61, $\lambda 2$ and 63, and col. 5, line 60 to col. 6, line 15).

Regarding claim 26, Sharma et al. disclose apparatus as claimed in claim 24 further comprising means for modulating a second of the group of wavelengths at the third location (fig. 4, elements 63, $\lambda 2'$ and 61, and col. 5, line 60 to col. 6, line 15).

Regarding claim 27, Sharma et al. disclose apparatus as claimed in claim 26 further comprising means for passing the modulated second of the group of wavelengths back to the second location whereby a two way communications path using two optical wavelengths between the second and third locations is established (fig. 4, elements 63, $\lambda 2'$ and 61, and col. 5, line 60 to col. 6, line 15).

Regarding claim 28, Sharma et al. disclose apparatus as claimed in claim 24 wherein the means for generating a plurality of optical wavelengths includes a multiple λ source (fig. 4, element 71).

Regarding claim 30, Sharma et al. disclose apparatus as claimed in claim 24, wherein the means for generating a plurality of optical wavelengths includes wavelength distributed multiplexers (col. 5, lines 46-53).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner (US Patent No. 5221983).

Regarding claim 10, Wagner discloses a method of optical wavelength allocation in a photonic network comprising the step of: generating a first plurality of unmodulated optical

Art Unit: 2633

wavelengths at a first location in the network (fig, 2, col. 5, lines 35-50 and col. 6, lines 53-61). Wagner does not explicitly disclose another central office at a second location in the network, where a second plurality of unmodulated optical wavelengths would be generated at a second location in the network, however it would have been obvious to one of ordinary skill in the art at the time of the invention that the central office disclosed by Wagner would be connected to another central office in the network, since interconnected central offices are well known in the art for networking different community/user groups located at various physically separate regions serviced by the network.

Regarding claim 15, Wagner discloses apparatus for optical wavelength allocation in an photonic network comprising: means for generating a first plurality of unmodulated optical wavelengths at a first location in the network (fig, 2, col. 5, lines 35-50 and col. 6, lines 53-61). Wagner does not explicitly disclose another central office at a second location in the network, where a second plurality of unmodulated optical wavelengths would be generated at a second location in the network, however it would have been obvious to one of ordinary skill in the art at the time of the invention that the central office disclosed by Wagner would be connected to another central office in the network, since interconnected central offices are well known in the art for networking different community/user groups located at various physically separate regions serviced by the network.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma et al. (US Patent No. 5717795).

Regarding claim 29, Sharma et al. disclose apparatus as claimed in claimed 28, and a WDM signal but do not disclose the particular term dense wavelength distributed multiplexing. However, Sharma et al. do disclose the importance of laser wavelength stability for the channel

Art Unit: 2633

spacing of the WDM signal (col. 2, lines 35-43 and lines 50-54). In addition, DWDM is well known in art and it is well known that laser wavelength stability is commonly a concern in DWDM and less of a concern in coarser WDM. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the system of Sharma et al. is suitable for DWDM transmission, which provides greater transmission bandwidth in the network than coarse WDM.

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma et al. (US Patent No. 5717795) in view of Kartalopoulos ("Introduction to DWDM Technology", IEEE Press, 2000; page 175).

Regarding claim 31, Sharma et al. disclose apparatus as claimed in claim 30, but do not disclose that the wavelength distributed multiplexers are coarse relative to a dense wavelength distributed multiplexing scheme. Kartalopoulos discloses that the term DWDM refers to a high density of wavelengths in the same fiber and that the terms CWDM refers to a low density of wavelengths in the same fiber. Sharma et al. disclose an example of a low density of wavelengths in the same fiber (fig. 4, λ_{1-3} and λ'_{1-3}). It would have been obvious to one of ordinary skill in the art at the time of the invention that the wavelength distributed multiplexers of Sharma et al. would be coarse relative to a dense wavelength distributed multiplexing scheme, in the example of fig. 4, since for a relatively small network as shown, coarse multiplexers would be much for cost efficient than dense multiplexers.

Allowable Subject Matter

1. Claims 1-9 are allowed.

Art Unit: 2633

Conclusion

10. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (703) 305-0370. The examiner can normally be reached M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600